PTO 1542
(4 85)

U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICE

101243

ONLINE SEARCH REQUEST FORM

USER Irene Marx SERIAL NUMBER 09/970453

ART UNIT 1651 PHONE _____ DATE 8/13/03

Please give a detailed statement of requirements. Describe as specifically as possible the subject matter to be searched. Define any terms that may have special meaning. Give examples or relevant citations, authors, or keywords, if known.

You may include a copy of the broadest and or relevant claim(s).

Please search inventors
Microbial production of L-epi-2-inosose
from myo-inositol
Microbial production of epi-inositol
from L-epi-2-inosose
with bacteria of Cl. 12
" " " of " " 13

STAFF USE ONLY

COMPLETED 8/18
SEARCHER Hanley
ONLINE TIME (in minutes) 1-1 TOTAL TIME _____
NO. OF DATABASES _____

SYSTEMS
STN CAS ONLINE
___ DARC/QUESTEL
___ DIALOG
___ SDC
___ OTHER

```
=> file caplus
FILE 'CAPLUS' ENTERED AT 15:29:05 ON 18 AUG 2003
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```



```
FILE COVERS 1907 - 18 Aug 2003  VOL 139 ISS 8
FILE LAST UPDATED: 17 Aug 2003  (20030817/ED)

  This file contains CAS Registry Numbers for easy and accurate
  substance identification.

=> d que l17

L13           1 SEA FILE=REGISTRY ABB=ON  PLU=ON  EPI-2-INOSOSE/CN
L16          24 SEA FILE=CAPLUS ABB=ON  PLU=ON  L13
L17           1 SEA FILE=CAPLUS ABB=ON  PLU=ON  L16(L)(BPN OR BMF)/RL
```

← any preparation of epi-2-inosose by biological means (micro organism)

```
=> d que l26

L13           1 SEA FILE=REGISTRY ABB=ON  PLU=ON  EPI-2-INOSOSE/CN
L15           1 SEA FILE=REGISTRY ABB=ON  PLU=ON  EPI-INOSITOL/CN
L16          24 SEA FILE=CAPLUS ABB=ON  PLU=ON  L13
L23         102 SEA FILE=CAPLUS ABB=ON  PLU=ON  L15
L24          10 SEA FILE=CAPLUS ABB=ON  PLU=ON  L23(L)PREP/RL
```

← prep (any means) of epi-inositol

```
L25           7 SEA FILE=CAPLUS ABB=ON  PLU=ON  L16(L)(RCT OR RACT)/RL
```

← epi-2-inosose as a reactant

```
L26           1 SEA FILE=CAPLUS ABB=ON  PLU=ON  L24 AND L25
```

1 cite

```
=> s l17 or l26

L81           1 L17 OR L26
```

1 cite (applicant)

```
=> file casreact

FILE 'CASREACT' ENTERED AT 15:29:08 ON 18 AUG 2003
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```



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FILE CONTENT:1907 - 17 Aug 2003 VOL 139 ISS 7

Some records from 1974 to 1991 are derived from the ZIC/VINITI data file
and provided by InfoChem and some records are produced using some INPI
data from the period prior to 1986.

This file contains CAS Registry Numbers for easy and accurate substance
identification.

Crossover limits have been increased.  See HELP RNCROSSOVER for details.
```

Structure search limits have been raised. See HELP SLIMIT for the new, higher limits.

=> d que l36

```
L34           1 SEA FILE=CASREACT ABB=ON  PLU=ON  6623-68-3/PRO
L35           2 SEA FILE=CASREACT ABB=ON  PLU=ON  488-58-4/PRO
L36           2 SEA FILE=CASREACT ABB=ON  PLU=ON  (L34 OR L35)
```

← prep of epi-2-inosose
← prep of epi-inositol
2 cites
any means

=> file uspatful

FILE 'USPATFULL' ENTERED AT 15:29:09 ON 18 AUG 2003
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FILE COVERS 1971 TO PATENT PUBLICATION DATE: 14 Aug 2003 (20030814/PD)
FILE LAST UPDATED: 14 Aug 2003 (20030814/ED)
HIGHEST GRANTED PATENT NUMBER: US6606748
HIGHEST APPLICATION PUBLICATION NUMBER: US2003154532
CA INDEXING IS CURRENT THROUGH 14 Aug 2003 (20030814/UPCA)
ISSUE CLASS FIELDS (/INCL) CURRENT THROUGH: 14 Aug 2003 (20030814/PD)
REVISED CLASS FIELDS (/NCL) LAST RELOADED: Jun 2003
USPTO MANUAL OF CLASSIFICATIONS THESAURUS ISSUE DATE: Jun 2003

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> d que l70

```
L14           1 SEA FILE=REGISTRY ABB=ON  PLU=ON  MYO-INOSITOL/CN
L58          31 SEA FILE=USPATFULL ABB=ON  PLU=ON  ?INOSOSE
L59        1910 SEA FILE=USPATFULL ABB=ON  PLU=ON  MYO-INOSITOL OR L14
L65           7 SEA FILE=USPATFULL ABB=ON  PLU=ON  L58(P)L59
L66           1 SEA FILE=USPATFULL ABB=ON  PLU=ON  L65(P)(MICROB? OR MICROORG?)

L67           4 SEA FILE=USPATFULL ABB=ON  PLU=ON  L65(P)(OXIDI? OR OXIDA?)
L68           3 SEA FILE=USPATFULL ABB=ON  PLU=ON  L65 AND (PSEUDOMONAS OR
                  XANTHOMONAS OR ACETOBACTER OR GLUCONOBACTER OR AGROBACTER?  OR
                  ERWINIA OR ENTEROBACTER OR SERRATIA OR YERSINIA OR PASTEURELLA
                  OR HAEMOPHIL?)
L69           0 SEA FILE=USPATFULL ABB=ON  PLU=ON  L65 AND FERM(W)BP(W)(7168
                  OR 7170 OR 7169 OR 10135 OR 10215 OR 10119)
L70           5 SEA FILE=USPATFULL ABB=ON  PLU=ON  (L66 OR L67 OR L68 OR L69)
```

5 cites

=> d que l77

```
L15           1 SEA FILE=REGISTRY ABB=ON  PLU=ON  EPI-INOSITOL/CN
L58          31 SEA FILE=USPATFULL ABB=ON  PLU=ON  ?INOSOSE
L60          49 SEA FILE=USPATFULL ABB=ON  PLU=ON  EPI-INOSITOL OR L15
L76           3 SEA FILE=USPATFULL ABB=ON  PLU=ON  (REDUC? OR BOROHYDRID?) AND
                  L58 AND L60
L77           2 SEA FILE=USPATFULL ABB=ON  PLU=ON  L76 NOT VANADIUM/TI
```

2 cites

=> s l70 or l77

```
L82           6 L70 OR L77
```

6 patents

=> file scisearch

FILE 'SCISEARCH' ENTERED AT 15:29:12 ON 18 AUG 2003
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FILE COVERS 1974 TO 15 Aug 2003 (20030815/ED)

```
=> d que l56

L49          30 SEA FILE=SCISEARCH ABB=ON  PLU=ON  EPI-INOSITOL
L55          59 SEA FILE=SCISEARCH ABB=ON  PLU=ON  ?INOSOSE
L56           2 SEA FILE=SCISEARCH ABB=ON  PLU=ON  L55 AND L49
```

2 cites SciSearch

```
=> file wpix

FILE 'WPIX' ENTERED AT 15:29:13 ON 18 AUG 2003
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FILE LAST UPDATED:          13 AUG 2003      <20030813/UP>
MOST RECENT DERWENT UPDATE:     200352        <200352/DW>
DERWENT WORLD PATENTS INDEX SUBSCRIBER FILE, COVERS 1963 TO DATE

>>> NEW WEEKLY SDI FREQUENCY AVAILABLE --> see NEWS  <<<

>>> SLART (Simultaneous Left and Right Truncation) is now
    available in the /ABEX field. An additional search field
    /BIX is also provided which comprises both /BI and /ABEX <<<

>>> PATENT IMAGES AVAILABLE FOR PRINT AND DISPLAY <<<

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    SEE http://www.derwent.com/dwpi/updates/dwpicov/index.html <<<

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 http://www.stn-international.de/training_center/patents/stn_guide.pdf <<<

>>> FOR INFORMATION ON ALL DERWENT WORLD PATENTS INDEX USER
    GUIDES, PLEASE VISIT:
    http://www.derwent.com/userguides/dwpi_guide.html <<<

=> d que l39

L37         245 SEA FILE=WPIX ABB=ON  PLU=ON  MYO-INOSITOL
L38           2 SEA FILE=WPIX ABB=ON  PLU=ON  EPI-2-INOSOSE
L39           1 SEA FILE=WPIX ABB=ON  PLU=ON  L37 AND L38


=> d que l41

L38           2 SEA FILE=WPIX ABB=ON  PLU=ON  EPI-2-INOSOSE
L40          10 SEA FILE=WPIX ABB=ON  PLU=ON  EPI-INOSITOL
L41           2 SEA FILE=WPIX ABB=ON  PLU=ON  L40 AND L38


=> d que l42

L38           2 SEA FILE=WPIX ABB=ON  PLU=ON  EPI-2-INOSOSE
L40          10 SEA FILE=WPIX ABB=ON  PLU=ON  EPI-INOSITOL
L41           2 SEA FILE=WPIX ABB=ON  PLU=ON  L40 AND L38
L42           1 SEA FILE=WPIX ABB=ON  PLU=ON  L41 AND BOROHYDRIDE


=> s l39 or l41-42

L83           2 L39 OR (L41 OR L42)
```

2 cites WPIX

```
=> dup rem l81 l36 l82 l56 l83
```

removing duplicates

```
FILE 'CAPLUS' ENTERED AT 15:30:17 ON 18 AUG 2003
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FILE 'USPATFULL' ENTERED AT 15:30:17 ON 18 AUG 2003
CA INDEXING COPYRIGHT (C) 2003 AMERICAN CHEMICAL SOCIETY (ACS)

FILE 'SCISEARCH' ENTERED AT 15:30:17 ON 18 AUG 2003
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FILE 'WPIX' ENTERED AT 15:30:17 ON 18 AUG 2003
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PROCESSING COMPLETED FOR L81
PROCESSING COMPLETED FOR L36
PROCESSING COMPLETED FOR L82
PROCESSING COMPLETED FOR L56
PROCESSING COMPLETED FOR L83
L84          10 DUP REM L81 L36 L82 L56 L83 (3 DUPLICATES REMOVED) 10 cites total
                ANSWER '1' FROM FILE CAPLUS
                ANSWER '2' FROM FILE CASREACT
                ANSWERS '3-8' FROM FILE USPATFULL
                ANSWER '9' FROM FILE SCISEARCH
                ANSWER '10' FROM FILE WPIX

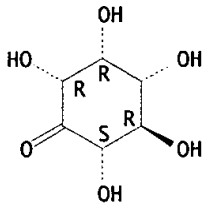
=> d ibib abs hitstr 1

L84  ANSWER 1 OF 10  CAPLUS  COPYRIGHT 2003 ACS on STN DUPLICATE 1
ACCESSION NUMBER:         2000:881342  CAPLUS
DOCUMENT NUMBER:          134:42384
TITLE:                    Novel process for producing L-epi-2-inosose by
                          microbial oxidation of myo-inositol and novel process
                          for producing epi-inositol
INVENTOR(S):              Takahashi, Atsushi; Kanbe, Kenji; Mori, Tetsuya; Kita,
                          Yuichi; Tamamura, Tsuyoshi; Takeuchi, Tomio
PATENT ASSIGNEE(S):       Hokko Chemical Industry Co., Ltd., Japan; Zaidan Hojin
                          Biseibutsu Kagaku Kenkyu Kai
SOURCE:                   PCT Int. Appl., 65 pp.
                          CODEN: PIXXD2
DOCUMENT TYPE:            Patent
LANGUAGE:                 Japanese
FAMILY ACC. NUM. COUNT:   1
PATENT INFORMATION:

     PATENT NO.        KIND  DATE          APPLICATION NO.  DATE
     ---------------   ----  --------      ---------------  --------
     WO 2000075355      A1   20001214      WO 2000-JP3687   20000607
         W:  CA, CN, IL, IN, JP, KR, US
         RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL,
             PT, SE
     EP 1197562         A1   20020417      EP 2000-937174   20000607
         R:  AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
             IE, SI, LT, LV, FI, RO
PRIORITY APPLN. INFO.:                    JP 1999-159861   A  19990607
                                          JP 1999-340523   A  19991130
                                          JP 2000-151709   A  20000523
                                          WO 2000-JP3687   W  20000607
OTHER SOURCE(S):          CASREACT 134:42384
AB   L-Epi-2-inosose and epi-inositol, which are useful as various drugs or
     synthesis intermediates, can be efficiently produced from less expensive
     myo-inositol.  Myo-inositol is treated with a gram-neg. bacterium. e.g.
     Xanthomonas sp., capable of converting myo-inositol into L-epi-2-inosose
     to thereby convert the myo-inositol into L-epi-2-inosose.  The
     L-epi-2-inosose thus obtained is further reacted in an aq. reaction medium
     with a reducing agent comprising an alkali metal boron hydride or another
     alkali metal hydride to form epi-inositol and myo-inositol.  Next, the
     epi-inositol is sepd. and isolated from the redn. reaction mixt.
```

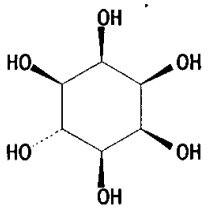
comprising epi-inositol and myo-inositol to give epi-inositol.
IT **6623-68-3P**, epi-2-Inosose
RL: **BPN (Biosynthetic preparation)**; **RCT (Reactant)**; BIOL (Biological study); PREP (Preparation); **RACT (Reactant or reagent)**
(novel process for producing L-epiinosose by microbial oxidn. of myo-inositol and boron hydride-redn. to epi-inositol)
RN 6623-68-3 CAPLUS
CN epi-2-Inosose (9CI) (CA INDEX NAME)

Relative stereochemistry.



IT **488-58-4P**, epi-Inositol
RL: SPN (Synthetic preparation); **PREP (Preparation)**
(novel process for producing L-epiinosose by microbial oxidn. of myo-inositol and boron hydride-redn. to epi-inositol)
RN 488-58-4 CAPLUS
CN epi-Inositol (9CI) (CA INDEX NAME)

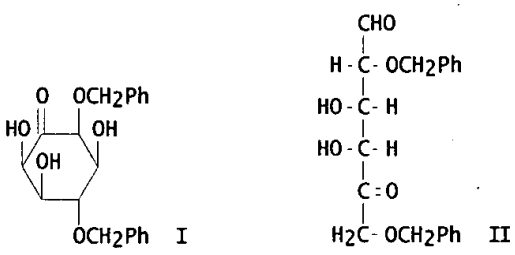
Relative stereochemistry.



REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> d ibib abs fcrdref 2

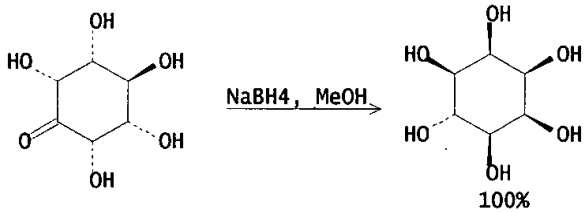
L84 ANSWER 2 OF 10 CASREACT COPYRIGHT 2003 ACS on STN DUPLICATE 2
ACCESSION NUMBER: 133:105232 CASREACT
TITLE: Rare and complex saccharides from D-galactose and other milk-derived carbohydrates. Part 12. A new highly diastereoselective synthesis of epi-inositol from D-galactose
AUTHOR(S): Pistara, Venerando; Barili, Pier Luigi; Catelani, Giorgio; Corsaro, Antonino; D'Andrea, Felicia; Fisichella, Salvatore
CORPORATE SOURCE: Dipartimento di Scienze Chimiche, Universita degli Studi di Catania, Catania, I-95125, Italy
SOURCE: Tetrahedron Letters (2000), 41(17), 3253-3256
CODEN: TELEAY; ISSN: 0040-4039
PUBLISHER: Elsevier Science Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
GI



I II

AB The inosose deriv. I (Bn = PhCH2) was obtained with high stereoselectivity by intramol. aldol condensation of the aldohexos-5-ulose II, and it was selectively reduced and debenzylated to give epi-inositol in high yield. The stereochem. and the preferred conformations of the compds. were detd. through 1D- and 2D-NMR expts.

RX(5) OF 13



REF: Tetrahedron Letters, 41(17), 3253-3256; 2000
NOTE: stereoselective

REFERENCE COUNT: 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> d ibib abs hitrn kwic 3-8

L84 ANSWER 3 OF 10 USPATFULL on STN
ACCESSION NUMBER: 2002:88660 USPATFULL
TITLE: Labelled phosphoinositides and analogues
INVENTOR(S): Aneja, Rajindra, Ithaca, NY, United States
PATENT ASSIGNEE(S): Nutrimed Biotech, Ithaca, NY, United States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 6376697	B1	20020423
APPLICATION INFO.:	US 1999-292242		19990415 (9)

	NUMBER	DATE
PRIORITY INFORMATION:	US 1998-81847P	19980415 (60)

DOCUMENT TYPE: Utility
FILE SEGMENT: GRANTED
PRIMARY EXAMINER: Ambrose, Michael G.
LEGAL REPRESENTATIVE: Williams, Morgan and Amerson
NUMBER OF CLAIMS: 29
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 0 Drawing Figure(s); 0 Drawing Page(s)
LINE COUNT: 1102
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The present invention provides novel compounds comprising cellular phosphoinositides and analogues tagged with stable or radioactive isotopes. The present invention also provides novel methods for the

preparation of the said phosphoinositides by syntheses, and novel key intermediates of synthesis; the novel methods of synthesis are applied also for the preparation of the phosphoinositides in non-labelled form. In addition, the present invention discloses a class of novel compounds as isotope labelled key precursors of labelled phosphoinositides. These precursors are derivatives of the target phosphoinositides, labelled with stable or radioactive isotopes, wherein OH and phosphate groups are blocked with temporary protecting groups.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

DETD In the second approach, outlined in Scheme 2, a selectively protected **myo-inositol**, e.g., 1D-2,6-di-O-benzyl-**myo-inositol**-3,4,5-tris(dibenzylphosphate) 10, wherein only the equatorial 1-OH is unprotected, and all other OH groups are blocked with temporary protecting groups is a suitable starting material. **Oxidation** of 10 (Step a) to the corresponding **inosose** 11 is carried out using the reagent mixture comprising dimethylsulfoxide and acetic anhydride (DMSO-Ac.sub.2O). A hydrogen, deuterium or tritium atom is introduced (Step b) by reduction of **inosose** 11, using NaBH.sub.4, NaB.sup.2H.sub.4 or NaB.sup.3H.sub.4, to the corresponding secondary alcohol 12 carrying H--C--OH, .sup.2H--C--OH or .sup.3H--C--OH labels. The product. . . pyridine. The purified product 13 is the labelled precursor analogous with 3, and is deprotected by H.sub.2-Pd/C to labelled 1D-1-(1',2'-O-dipalmitoyl -sn-glycero-3'-phospho)-**myo-inositol**-3,4,5-trisphosphate (DPPtdIns-3,4,5-P.sub.3) 14. ##STR5##

DETD The phosphatidyl-**inosose** (7) and **inosose** (11) employed in Scheme 1 and 2 respectively are important novel intermediates. Equally useful are the 2-phosphatidyl-1-keto and 1-phosphatidyl-6-keto structural isomers of 7 and the 2-keto and 6-keto isomers of 11 prepared by **oxidation** of the corresponding 1-phosphatidyl-1-OH and 1-phosphatidyl-6-OH compounds. Both phosphatidyl-**inosose** and **inosose** types may have temporary protecting groups other than benzyls so as to avoid metal catalyzed hydrogenolysis for deprotection and concomitant reduction of C--C unsaturation in the fattyacyl chains. The present invention discloses novel selectively protected chiral **myo-inositol** synthons that incorporate temporary protecting groups which are removed without metal catalyzed hydrogenation. In addition, the groups are compatible with the reagents and conditions validated in Schemes 1 and 2 for the **oxidation** and reduction steps.

DETD Similarly, the 2-phosphatidyl isomer 1D-2-(1',2'-O-dipalmitoyl-sn-glycero-3'-phospho)-3,6di-O-benzyl-**myo-inositol**-4,5-bis(dibenzylphosphate) 51 was esterified to 52. Both 49 and 52 formed on **oxidation** the corresponding **inosose** derivative, 50 and 53 respectively. These phosphatidyl-**inosose** esters represent another group of key intermediates for labeling with hydrogen isotopes.

DETD **Oxidation** of 1D-1-(1',2'-O-dipalmitoyl-sn-glycero-3'-phospho)-3,6-di-O-benzyl-**myo-inositol**-4,5-bis(dibenzylphosphate) 6 by CrO.sub.3.Py.sub.2 (Procedure A) at r.t. for 5 min was quenched by ice cold aqueous SO.sub.2. The product recovered by evaporation of the organic layer. Purification by chromatography on flash silica using a gradient of CHCl.sub.3--MeOH--NH.sub.4OH gave 1D-1-(1', 2'-O-dipalmitoyl-sn-glycero-3'-phospho)-3,6-di-O-benzyl-2-myo-**inosose**-4,5-bis(dibenzylphosphate) 7 (yield 69%).

DETD **Oxidation** of 1D-2-(1',2'-O-dipalmitoyl-sn-glycero-3'-phospho)-3,6-di-**myo-inositol**-4,5-bis(dibenzylphosphate) 51 by Procedure A was complete at r.t. in min; worked up and purification as in Example 1, gave 1D-2-(1',2'-O-dipalmitoyl-sn-glycero-3'-phospho)-3,6-di-1-myo-**inosose**-4,5-bis(dibenzylphosphate) (yield 86%).

DETD **Oxidation** of 1D-1-(1',2'-O-dipalmitoyl-sn-glycero-3'-phospho)-3,6-di-O-benzyl-**myo-inositol**-4,5-bis(dibenzylphosphate)-benzyl ester 49 using Procedure A, and purification as in the general protocol gave 1D-1-(1',2'-O-dipalmitoyl-sn-glycero-3'-phospho)-3,6-di-O-benzyl-2myo-**inosose**-4,5-bis(dibenzylphosphate)-benzyl ester 50 (yield 65%).

DETD **Oxidation** of 1D-2-(1',2'-O-dipalmitoyl-sn-glycero-3'-phospho)-3,6-di-O-benzyl-**myo-inositol**-4,5-bis(dibenzylphosphate)-benzyl ester 52 by Procedure A, work up and purification as in the general protocol gave 1D-2-(1',2'-O-dipalmitoyl-sn-glycero-3'-phospho)-3,6-di-O-benzyl-1-myo-**inososе**-4,5-bis(dibenzylphosphate)-benzyl ester 53 (yield 72%).

L84 ANSWER 4 OF 10 USPATFULL on STN

ACCESSION NUMBER:	2000:174129 USPATFULL		
TITLE:	Preparation for the application of agents in mini-droplets		
INVENTOR(S):	Cevc, Gregor, Heimstetten, Germany, Federal Republic of		
PATENT ASSIGNEE(S):	Idea AG, Munich, Germany, Federal Republic of (non-U.S. corporation)		
	NUMBER	KIND	DATE
PATENT INFORMATION:	US 6165500		20001226
APPLICATION INFO.:	US 1992-844664		19920408 (7)
	NUMBER		DATE
PRIORITY INFORMATION:	DE 1990-4026834		19900824
	DE 1990-4026833		19900824
	DE 1991-4107153		19910306
	WO 1991-EP1596		19910822
DOCUMENT TYPE:	Utility		
FILE SEGMENT:	Granted		
PRIMARY EXAMINER:	Kishore, Gollamudi S.		
LEGAL REPRESENTATIVE:	Davidson, Davidson & Kappel, LLC		
NUMBER OF CLAIMS:	35		
EXEMPLARY CLAIM:	1		
NUMBER OF DRAWINGS:	31 Drawing Figure(s); 21 Drawing Page(s)		
LINE COUNT:	4336		

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The invention relates to a preparation for the application of agents in the form of minuscule droplets of fluid, in particular provided with membrane-like structures consisting of one or several layers of amphiphilic molecules, or an amphiphilic carrier substance, in particular for transporting the agent into and through natural barriers such as skin and similar materials. The preparation contains a concentration of edge active substances which amounts to up to 99 mol-% of the agent concentration which is required for the induction of droplet solubilization. Such preparations are suitable, for example, for the non-invasive applications of antidiabetics, in particular of insulin. The invention, moreover, relates to the methods for the preparation of such formulations.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

SUMM . . . K. (1989) Arzneim. Forsch./Drug Res. 39, 1487-1491). In the case of plants, improved penetration into or through the cuticle could **reduce** the drug concentration required for a given application and thus significantly diminish pollution problems (Price, C. E. (1981) In: The. . .

DETD . . . form of a cyclic lactone residue. The aldehyde- or keto-groups in a derivatised mono- or disaccharide residue can also be **reduced** to a hydroxy group, e.g. in inositol, sorbitol or D-mannitol; also, one or several hydroxy groups can be replaced by. . .

DETD . . . the form of cyclic lactone residues. The aldehyde- or keto-groups in a derivatised mono- or disaccharide residue, moreover, can be **reduced** to hydroxy groups, e.g. in inositol, sorbitol or D-mannitol. Furthermore, individual hydroxy groups can be replaced by hydrogen atoms, e.g.. . .

DETD A carbohydrate can result from a cleaving action, starting with one of the mentioned mono- or disaccharides, by a strong **oxidation** agent, such as periodic acid. Amongst the biologically most important or

most active carbohydrates are e.g. 2-acetamido-N-(epsilon-amino-caproyl)-2-deoxy-beta-gluccopyranosylamine, 2-acetamido-2-amino-1,2-dideoxy-beta-glucopyranose, 2-acetamido-1-beta-(aspartamido)-1,2-dideoxyglucose, 2-acetamido-4,6-o-benzyliden-2-deoxybeta-glucopyranose,. . . beta-glucopyranoside, hesperidin, n-hexyl-beta-glucopyranoside, hyaluronic acid, 16-alpha-hydroxyestronglucuronide, 16-beta-hydroxyestron glucuronide, hydroxyethyl starch, hydroxypropylmethyl-cellulose, 8-hydroxyquinolin-beta-glucopyranoside, 8-hydroxyquinolin glucuronide, idose, (-)-idose, indole-3- lactic acid, indoxyl-beta-glucoside, **epi-inositol**, **myo-inositol**, **myo-inositol** bisphosphate, **myo-inositol**-1,2-cyl phosphate, scyllo-inositol, inositolhexaphosphate, inositolhexasulfate, myo-insoitol 2-monophosphate, **myo-inositol** trisphosphate, (q)-epi-**inosose**-2, scyllo-**inosose**, inulin, isomaltose, isomaltotriose, isosorbid dinitrate, 11-ketoandrosterone beta-glucuronide, 2-ketogluconic acid, 5-ketogluconic acid, alpha-ketopropionic acid, lactal, lactic acid, lactitol, lactobionic acid, lacto-N-tetraose,. . . acid, neuraminic acid beta-methylglycoside, neuramine-lactose, nigeran, nigerantetrasaccharide, nigerose, n-nonyl glucoside, n-nonylbeta-glucopyranoside, octadecylthio-ethyl 4-o-alpha-galactopyranosyl-beta-galactopyranoside, octadecylthioethyl 4-o-(4-o-[6-o-alpha-glucopyranosyl-alpha-glucopyranosyl]-alpha-glucopyranosyl)-beta-glucopyranoside, octanoyl n-methylglucamide, n-octyl alpha-glucopyranoside, n-octyl-beta-glucopyranoside, **oxidised** starch, pachyman, palatinose, panose, pentaerythritol, pentaerythritol diformal, 1,2,3,4,5-pentahydroxy, capronic acid, pentosanpolysulfate, perseitol, phenolphthalein glucuronic acid, phenolphthalein mono-beta-glucosiduron phenyl 2-acetamido-2-deoxy-alpha-galactopyranoside, phenyl2-acetamido-2-deoxy-alpha-glucopyranoside,. .

DETD Oxidoreductases, such as: alcohol dehydrogenase (1.1.1.1), alcohol dehydrogenase (NADP dependent) (1.1.1.2), glycerol dehydrogenase (1.1.1.6), glycerophosphate dehydrogenase (1.1.1.8), xylulose **reductase** (1.1.1.10), polyol dehydrogenase (1.1.1.14), sorbitol dehydrogenase (1.1.1.14), myo-inositol dehydrogenase (1.1.1.18), uridine 5'-diphosphoglucose dehydrogenase (1.1.1.22), glyoxalate **reductase** (1.1.1.26), lactate dehydrogenase (1.1.1.27), lactate dehydrogenase (1.1.1.28), glycerate dehydrogenase (1.1.1.29), beta-hydroxybutyrate dehydrogenase (1.1.1.30), beta-hydroxyacyl CoA dehydrogenase (1.1.1.35), malate dehydrogenase (1.1.1.37),. . . glutamic dehydrogenase (1.4.1.3), glutamate dehydrogenase (NADP) (1.4.1.4), L-amino acid oxidase (1.4.3.2), D-amino acid oxidase (1.4.3.3), monoaminoxidase (1.4.3.4), diaminoxidase (1.4.3.6), dihydrofolate **reductase** (1.5.1.3), 5,10-methylenetetrahydrofolat dehydrogenase (1.5.1.5), saccharopine dehydrogenase NAD+ (1.5.1.7), octopine dehydrogenase (1.5.1.11), sarcosine oxidase (1.5.3.1), sarcosine dehydrogenase (1.5.99.1), glutathione **reductase** (1.6.4.2), ferridoxin-NADP+ **reductase** (1.6.7.1), NADPH-FMN oxidoreductase (1.6.99.1), cytochrome c **reductase** (1.6.99.3), NADH-fmn oxidoreductase (1.6.99.3), dihydropteridin **reductase** (1.6.99.7), uricase (1.7.3.3), diaphorase (1.8.1.4), lipoamide dehydrogenase (1.8.1.4), cytochrome oxidase (1.9.3.1), nitrate **reductase** (1.9.6.1), phenolase (1.10.3.1), ceruloplasmine (1.10.3.2), ascorbate oxidase (1.10.3.3), NADH peroxidase (1.11.1.1), catalase (1.11.1.6), lactoperoxidase (1.11.1.7), myeloperoxidase (1.11.1.7), peroxidase (1.11.1.7), glutathione. . . salicylate hydroxylase (1.14.13.7), p-hydroxybenzoate hydroxylase (1.14.13.2), luciferase (bacterial) (1.14.14.3), phenylalanine hydroxylase (1.14.16.1), dopamine-beta-hydroxylase (1.14.17.1), tyrosinase (1.14.18.1), superoxide dismutase (1.15.1.1), ferredoxine-NADP **reductase** (1.18.1.2), etc..
Transferases, such as: catecholic o-methyltransferase (2.1.1.6), phenylethanol-amine N-methyl-transferase (2.1.1.28), aspartate transcarbamylase (2.1.3.2), ornithine carbamyltransferase (2.1.3.3), transketolase (2.2.1.1), transaldolase. . .

DETD . . . cobra), Naja Naja kaouthia, Mycoplasma gallisepticum, Perseau americana (avocado), Phaseolus coccineus (beans), Phaseolus limensis, Phaseolus lunatus, Phaseolus vulgaris, Phytolacga americana, **Pseudomonas** aeruginosa PA-I, Pisum sativum (pea), Ptilota plumosa (red algae), Psophocarpus tetragonolobus (winged bean), Ricinus communis (castor bean), Robinia pseudoacacia (false. . .

DETD . . . be parts of a biological extract. As sources of biologically and/or pharmacologically active extracts, the following are worth-mentioning: for example, **Acetobacter** pasteurianum, Acokanthera ouabaio cathel, Aesculus hippocastanum, Ammi visnaga Lam., Ampi Huasca, Apocynum Cannabium, Arthrobotrys superba var. oligospora (ATCC 11572), Atropa. . .

DETD Next, the carrier composition or concentration is adapted by **reducing** the edge activity in the system to an extent which ensures the vesicle stability as well vesicle deformability to be. . .

DETD If the pore diameter is **reduced** to 0.05 micrometers only suspensions with L/S ratios below 2/1 can still be filtered.

L84 ANSWER 5 OF 10 USPATFULL on STN

ACCESSION NUMBER:	2000:40863 USPATFULL			
TITLE:	Highly sensitive method for assaying chiro-inositol and compositions for the assay			
INVENTOR(S):	Kozuma, Takuji, Shizuoka, Japan Takahashi, Mamoru, Shizuoka, Japan			
PATENT ASSIGNEE(S):	Asahi Kasei Kogyo Kabushiki Kaisha, Osaka, Japan (non-U.S. corporation)			
	NUMBER	KIND	DATE	
PATENT INFORMATION:	US 6046018		20000404	
	WO 9842863		19980110	
APPLICATION INFO.:	US 1999-308575		19990608	(9)
	WO 1998-JP1215		19980320	
			19990608	PCT 371 date
			19990608	PCT 102(e) date
	NUMBER		DATE	
PRIORITY INFORMATION:	JP 1997-72878		19970326	
DOCUMENT TYPE:	Utility			
FILE SEGMENT:	Granted			
PRIMARY EXAMINER:	Leary, Louise N.			
LEGAL REPRESENTATIVE:	Young & Thompson			
NUMBER OF CLAIMS:	5			
EXEMPLARY CLAIM:	1			
NUMBER OF DRAWINGS:	6 Drawing Figure(s); 6 Drawing Page(s)			
LINE COUNT:	1012			

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The present invention relates to an assay method of chiroinositol which comprises reacting a specimen containing chiroinositol with

1) a dehydrogenase, which catalyses at least reversible reaction with a substrate of chiroinositol in the presence of a coenzyme selected from NAD(P)s and a coenzyme selected from thio-NAD(P)s,

2) A1 and

3) B1

to form cycling reaction of the formula ##STR1## wherein a product is a compound, from which 2 or 4 hydrogen atoms are deleted from chiroinositol, A1 is NAD(P)s or thio-NAD(P)s, A2 is a **reduced** form of A1, B1 is a **reduced** form of NAD(P)s in case of A1 being thio-NAD(P)s or a **reduced** form of thio-NAD(P)s in case of A1 being NAD(P)s and B2 is an oxidized form of B1, and determining an amount of converted A2 or B1 by the said reaction, and a composition for assay of chiroinositol. Chiroinositol can be assayed by accurate,

simple, low price and high sensitive method.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB . . . compound, from which 2 or 4 hydrogen atoms are deleted from chiroinositol, A1 is NAD(P)s or thio-NAD(P)s, A2 is a **reduced** form of A1, B1 is a **reduced** form of NAD(P)s in case of A1 being thio-NAD(P)s or a **reduced** form of thio-NAD(P)s in case of A1 being NAD(P)s and B2 is an oxidized form of B1, and determining an. . .

SUMM . . . compound, from which 2 or 4 hydrogen atoms are deleted from chiroinositol, A1 is NAD(P)s or thio-NAD(P)s, A2 is a **reduced** form of A1, B1 is a **reduced** form of NAD(P)s in case of A1 being thio-NAD(P)s or a **reduced** form of thio-NAD(P)s in case of A1 being NAD(P)s and B2 is an oxidized form of B1, and determining an. . .

SUMM 3) in the above 2), at least a coenzyme selected from **reduced** thio-NAD (P)s in case of at least a coenzyme selected from NAD(P)s, or in the above 2), at least a coenzyme selected from **reduced** NAD(P)s in case of at least ,t coenzyme selected from thio-NAD(P)s.

SUMM . . . in body fluid such as blood or urine for diagonosis of diabetes mellitus, especially insulin resistance, is useful, and suggest **reduction**/oxidation analysis using enzyme, however no concrete method has proposed.

SUMM In order to assay trace amount of chiroinositol in vivo in clinical biochemical test, not only direct assay method of **reduced** coenzyme using dehydrogenase but also a combination with coloring agent for assay is resulted to insufficient sensitivity. We have found. . . dehydrogenase derived from Aerobacter aerogenes acts on myoinositol in the presence of NAD to delete 2 hydrogen atoms to form **myoinososse** 2, under sufficient progressive condition for reaction, a compound generated from a reaction in which at first 2 hydrogen atoms. . . not detected by paper chromatography [J. Biol. Chem., 241 (4); 1966, 800-806]. Since the said final compound is different from **myoinososse** 2 and is very unstable, to construct a stable enzymatic cycling reaction might be impossible.

SUMM . . . compound, from which 2 or 4 hydrogen atoms are deleted from chiroinisitol, A1 is NAD(P)s or thio-NAD(P)s, A2 is a **reduced** form of A1, B1 is a **reduced** form of NAD(P)s in case of A1 being thio-NAD(P)s or a **reduced** form of thio-NAD(P)s in case of A1 being NAD(P)s and B2 is an oxidized form of B1, and can be. . .

SUMM . . . compound, from which 2 or 4 hydrogen atoms are deleted from chiroinositol, A1 is NAD(P)s or thio-NAD(P)s, A2 is a **reduced** form of A1, B1 is a **reduced** form of NAD(P)s in case of A1 being thio-NAD (P)s or a **reduced** form of thio-NAD(P)s in case of A1 being NAD(P)s and B2 is an oxidized form of B1, and determining an. . .

SUMM 3) in the above 2), at least a coenzyme selected from **reduced** thio-NAD(P)s in case of at least a coenzyme selected from NAD(P)s, or in the above 2), at least a coenzyme selected from **reduced** NAD(P)s in case of at least a coenzyme selected from thio-NAD(P)s.

SUMM . . . production (detected by lead acetate paper) -
Acetoin production (K.sub.2 HPO.sub.4) -
Acetoin Production (NaCl) -
MR test -
Nitrate **reduction** test (gas formation) -
(NO.sub.2 - detection) -
(NO.sub.3 - detection) +
Utilization on Simmons medium
Citrate -
Malate -
. . .
SUMM . . . C. + + +
55.degree. C. + + +
60.degree. C. ND ND -
70.degree. C. - - +
Nitrate **reduction** d + -
GC mole % of DNA 44.5 46.4 41.9

(Type) (Type)
44.3.about.50.3 42.9.about.49.9

SUMM The present enzyme catalyses a reaction for generating **reduced** coenzyme [NAD(P)Hs and thio-NAD(P)Hs] in the presence of chiroinositol and coenzyme [NAD(P)s and thio-NAD(P)s]. Examples of the above NAD(P)s are. . .

SUMM . . . and deamino NAD; 14 U/ml) 20 .mu.l is added and stirred. Absorption changes per minute in specific wavelength for each **reduced** coenzyme is measured to obtain initial reaction rate. (For NAD and deamino NAD, measured value is increased number by ten. .

SUMM A product in the present cycling reaction is an amount of **reduced** NAD generated by the reaction with chiroinositol and excess amount of NAD. In the reaction, 2 hydrogen atoms are deleted. . . the first reaction and 2 hydrogen atoms are further deleted at the second reaction. These are confirmed by increase in **reduced** NAD, which is determined by an amount of formazan pigment having maximum absorption at 550 nm generated as a result of an act on of NBT (nitroblue tetrazolium) on the **reduced** NAD in the presence of diaphorase.

SUMM TABLE 1

Substrate	Relative activity
chiroinositol	100%
myoinositol	9%
scylloinositol	0%
epi-inositol	0%
galactose	0%
fructose	0%
mannose	0%
mannitol	0%

SUMM TABLE 3

	A.r.1215 origin	S.r.301 origin
chiroinositol	100%	100%
myoinositol	33%	0%
scylloinositol	0%	0%
epi-inositol	0%	4%
fructose	0%	0%
mannose	10%	0%
mannitol	0%	0%

SUMM . . . 2 or 4 hydrogen atoms are deleted from chiroinositol, A1 and B2 are NAD(P)s or thio-NAD(P)s, A1 and B1 are **reduced** form thereof, and in A1 and B1, when A1 is thio-NAD(P)s, B1 is NAD(P)Hs, and when B1 is thio-NAD(P)H, A1. . .

SUMM In case of enzyme cycling method in the present invention, if A1 and B1 are expensive, in order to **reduce** amount of A1 and B1, a combination of a dehydrogenase which constitutes a reaction of B2.fwdarw.B1 and not reacted with. . . dehydrogenase which constitutes a reaction of A2.fwdarw.A1 and not reacted with chiroinositol and substrate for dehydrogenase can be used for **reducing** amount of A1 and B1.

SUMM **Reduced** coenzyme assay by measuring absorption change used in the present invention can be performed by other known method.

DETD As shown in the above, the present invention provide rate assay of the **reduced** coenzyme and the blank assay for the specimen can be ommitted. Consequently, simple.assay can be performed, and sensitivity of. . .

CLM What is claimed is:

. . . compound, from which 2 or 4 hydrogen atoms are deleted from chiroinositol, A1 is NAD(P)s or thio-NAD(P)s, A2 is a **reduced**

form of A1, B1 is a **reduced** form of NAD(P)s in case of A1 being thio-NAD(P)s or a **reduced** form of thio-NAD(P)s in case of A1 being NAD(P)s and B2 is an oxidized form of B1, and determining an. . .

. . . least a coenzyme selected from NAD(P)s and thio-NAD(P)s, and 3) in the above 2), at least a coenzyme selected from **reduced** thio-NAD(P)s in case of at least a coenzyme selected from NAD(P)s, or in the above 2), at least a coenzyme selected from **reduced** NAD(P)s in case of at least a coenzyme selected from thio-NAD(P)s.

L84 ANSWER 6 OF 10 USPATFULL on STN
ACCESSION NUMBER: 94:90948 USPATFULL
TITLE: Highly sensitive assay method for myo-inositol, composition for practicing same, novel myo-inositol dehydrogenase, and process for producing same
INVENTOR(S): Ueda, Shigeru, Shizuoka, Japan
Takahashi, Mamoru, Shizuoka, Japan
Misaki, Hideo, Shizuoka, Japan
Imamura, Shigeyuki, Shizuoka, Japan
Matsuura, Kazuo, Shizuoka, Japan
PATENT ASSIGNEE(S): Asahi Kasei Kogyo Kabushiki Kaisha, Osaka, Japan (non-U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 5356790		19941018
APPLICATION INFO.:	US 1993-106693		19930816 (8)

RELATED APPLN. INFO.: Continuation of Ser. No. US 1991-761465, filed on 18 Sep 1991, now abandoned

	NUMBER	DATE
PRIORITY INFORMATION:	JP 1990-2249775	19900918
	JP 1990-2249776	19900918

DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Wityshyn, Michael G.
ASSISTANT EXAMINER: Leary, Louise N.
LEGAL REPRESENTATIVE: Young & Thompson
NUMBER OF CLAIMS: 5
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 8 Drawing Figure(s); 8 Drawing Page(s)
LINE COUNT: 819
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Myo-inositol in a specimen is assayed by reacting a specimen containing myo-inositol with:

a) **myo-inositol** dehydrogenase using a thio-NADP group or thio-NAD group and an NADP group or NAD group as coenzymes, and which catalyzes a reversible reaction forming myo-**inosose** from **myo-inositol**,

b) A.sub.1 and

c) B.sub.1

to effect a cycling reaction ##STR1## wherein A.sub.1 is a thio-NADP group, thio-NAD group, NADP group or NAD group, A.sub.2 is a reduced form of A.sub.1, when A.sub.1 is a thio-NADP group or thio-NAD group, B.sub.1 is a reduced NADP group or reduced NAD group and when A.sub.1 is an NADP group or NAD group, B.sub.1 is a reduced thio-NADP group or reduced thio-NAD group, and wherein B.sub.2 is an oxidized form of B.sub.1. The change in the amount of A.sub.2 generated or B.sub.1 consumed by the cycling reaction is measured to perform the assay. A composition for performing the assay comprises the above myo-inositol dehydrogenase, as well as the above components A.sub.1 and B.sub.1. The

myo-inositol dehydrogenase can be produced by culturing a suitable microorganism belonging to genus Bacillus, particularly Bacillus sp. No. 3 FERM BP-3013.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB a) **myo-inositol** dehydrogenase using a thio-NADP group or thio-NAD group and an NADP group or NAD group as coenzymes, and which catalyzes a reversible reaction forming myo-**inosose** from **myo-inositol**,

SUMM (1) **myo-inositol** dehydrogenase using one of coenzymes of thionicotinamide adonine dinucleotide phosphate group (hereinafter designated thio-NADP group) or thionicotinamide adenine dinucleotide group. . . (hereinafter designated NADP group) or nicotinamide adonine dinucleotide group (hereinafter designated NAD group) and which catalyzes a reversible reaction forming myo-**inosose** from a substrate of **myo-inositol**,

DETD Aerobacter aerogenes (J. Biol. Chem., 241, 800-806 (1966)); Klebsiella pneumoniae, **Serratia** marcescens, Cryptococcus melibiosum (Biochim. Biophys. Acta., 293, 295-303 (1973)); and bovine brain (Biochem. Biophys. Res. Comm., 68, 1133-1138 (1976)); Bacillus. . .

DETD Among these, Aerobacter aerogenes, Klebsiella pneumoniae and **Serratia** marcescens are known as etiologic microorganisms for pneumonia and opportunistic infections (Standard Microbiology, 2nd edn., pp. 209-212, Igaku Shoin Publishing. . .

DETD The enzyme catalyzes essentially a reaction of myo-**inositol** and NAD to generate myo-**inosose** and reduced NADH, as follows:

DETD **myo-inositol**+NAD.about.myo-**inosose** *+reduced NADH *(2,4,6/3,5-pentahydroxy cyclohexanone)

DETD Glyoxylate dehydrogenase (EC.1.2.1.17) (**Pseudomonas** oxalaticus) and CoA and glyoxylate,

DETD Benzaldehyde dehydrogenase (EC.1.2.1.7) (**Pseudomonas** fluorescens) and benzaldehyde.

CLM What is claimed is:

1. A method of assaying **myo-inositol** comprising reacting a specimen containing **myo-inositol** with the following reagents: a) **myo-inositol** dehydrogenase which, in the presence of a thionicotinamide adenine dinucleotide group (thio-NAD-group) and a nicotinamide adenine dinucleotide group (NAD group) as coenzymes, catalyzes a reversible reaction forming myo-**inosose** from **myo-inositol**, b) A.sub.1 and c) B.sub.1 ; to effect a cycling reaction ##STR5## wherein A.sub.1 is a thio-NAD group or NAD. . . NAD group and when A.sub.1 is an NAD group, B.sub.1 is a reduced thio-NAD group, and wherein B.sub.2 is an **oxidized** form of B.sub.1 ; and measuring a change in the amount of A.sub.2 generated or B.sub.1 consumed by the cycling reaction wherein A.sub.1 and B.sub.1 are each used at a concentration of 0.02-100 mM, and wherein said **myo-inositol** dehydrogenase is used at a concentration of 5-1000 U/ml.

3. A reagent composition for assaying **myo-inositol**, comprising: a) **myo-inositol** dehydrogenase which, in the presence of a thionicotinamide adenine dinucleotide group (thio-NAD group) and a nicotinamide adenine dinucleotide group (NAD group) as coenzymes, catalyzes a reversible reaction forming myo-**inosose** from **myo-inositol**, b) A.sub.1 and c) B.sub.1 ; wherein A.sub.1 is a thio-NAD group or NAD group, when A.sub.1 is a thio-NAD. . . of a thio-NAD group wherein A.sub.1 and B.sub.1 are each present in a concentration of 0.02-100 mM, and wherein said **myo-inositol** dehydrogenase is present in a concentration of 5-1000 U/ml.

4. **Myo-inositol** dehydrogenase having the following properties: substrate spcificity for **myo-inositol** and catalyzes a reaction **myo-inositol**+NAD.about.myo-**inosose**+reduced NADH, said **myo-inositol** dehydrogenase having the following physicochemical properties: (1)

molecular weight: 130,000.+-.15,000 (gel filtration method by TSK gel G 3000 SW) (2) iso-electric point: pH 4.5.+-.0.5 (3) Km-value: Km value for **myo-inositol**: 0.64 mM Km value for NAD: 0.004 mM
(4) optimum pH: approximately ph. 9.5 (5) pH-stability: more than 80% retained. . .

L84 ANSWER 7 OF 10 USPATFULL on STN
ACCESSION NUMBER: 93:57049 USPATFULL
TITLE: 3-deoxy-3-substituted analogs of phosphatidylinositol
INVENTOR(S): Kozikowski, Alan P., Ponte Verde Beach, FL, United States
Tuckmantel, Werner, Jacksonville, FL, United States
Faug, Abdul H., Jacksonville, FL, United States
Powis, Garth, Tucson, AZ, United States
PATENT ASSIGNEE(S): Mayo Foundation for Medical Education and Research, Rochester, MN, United States (U.S. corporation)

	NUMBER	KIND	DATE	
PATENT INFORMATION:	US 5227508		19930713	
APPLICATION INFO.:	US 1992-825523		19920124	(7)

DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Ramsuer, Robert W.
ASSISTANT EXAMINER: Ambrose, Michael G.
LEGAL REPRESENTATIVE: Merchant, Gould, Smith, Edell, Welter & Schmidt
NUMBER OF CLAIMS: 15
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 6 Drawing Figure(s); 6 Drawing Page(s)
LINE COUNT: 927
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The invention provides 3-deoxy-3-substituted analogs of phosphatidylinositol which are useful to inhibit the growth of mammalian cells, i.e., to treat neoplastic conditions and other proliferative disorders of mammalian cells.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
DETD The key intermediate, 2,4,5,6-tetra-O-benzyl-3-deoxy-3-fluoro-D-**myo-inositol** (40), is available as outlined earlier.
Inversion of the stereochemistry at C-1 is brought about by **oxidation** to the **inosose** ((COCl).sub.2, DMSO, i-Pr.sub.2 NEt), followed by stereoselective reduction of the 1-ketone with L-Selectride.RTM. (Aldrich Chem. Co.). The resulting axial alcohol. . .

L84 ANSWER 8 OF 10 USPATFULL on STN
ACCESSION NUMBER: 76:52995 USPATFULL
TITLE: Process for preparing aminocyclitol antibiotics
INVENTOR(S): Daum, Sol J., Albany, NY, United States
Clarke, Robert L., Bethlehem, NY, United States
PATENT ASSIGNEE(S): Sterling Drug Inc., New York, NY, United States (U.S. corporation)

	NUMBER	KIND	DATE	
PATENT INFORMATION:	US 3982996		19760928	
APPLICATION INFO.:	US 1975-615593		19750922	(5)

DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Tanenholtz, Alvin E.
LEGAL REPRESENTATIVE: Webb, William G., Wyatt, B. W.
NUMBER OF CLAIMS: 12
EXEMPLARY CLAIM: 1
LINE COUNT: 728
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Aminocyclitol antibiotics of the streptamine, deoxystreptamine or dideoxystreptamine type are prepared by culturing a nutrient medium

containing carbohydrates, a source of assimilable nitrogen, essential salts and a non-nitrogen containing cyclitol with a mutant of an aminocyclitol antibiotic producing organism.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

SUMM Yet a process that would permit the use of cyclitols, instead of aminocyclitols, for incorporation into aminocyclitol-type antibiotics by **microorganism** mutants using the Rinehart/Shier method would provide a very significant advance in the aminocyclitol antibiotic art, because the method would afford, by judicious selection of the **microorganism** and the cyclitol subunit, a certain degree of biogenetic "tailoring" of the resultant antibiotic molecule. Moreover, since the aminocyclitols are. . . products could be realized. (For example, streptamine, at present prices, costs about $1 per gram, whereas its probable biogenetic precursor, scyllo-**inosose**, can be obtained in about 80% yield by fermentative oxydation of **myo -inositol**, which only costs about 2 cents per gram at present).

DETD . . . [dl-1,2,3,4,5-cyclohexanepentol (1,2,4-cis)] [McCasland et al., J. Am. Chem. Soc. 75, 4020 (1953)] (0.40 mole) was subjected to microbiological oxidation by **Acetobacter** suboxydans using the procedure described by Posternak, Helv. Chim. Acta 33, 1594-1596 (1950). To the resulting broth was added 5. . .

DETD The latter was subjected to microbiological oxidation by **Acetobacter** suboxydans using the procedure described by Posternak recorded above in Preparation 1, and the product was isolated as described in. . .

=> d ibib abs 9

L84 ANSWER 9 OF 10 SCISEARCH COPYRIGHT 2003 THOMSON ISI on STN
ACCESSION NUMBER: 97:313486 SCISEARCH
THE GENUINE ARTICLE: WT993
TITLE: Reactions of the ketone derived from (+/-)-3,4,5-tri-O-benzyl-1,2-O-isopropylidene-myo-inositol: Preparation of racemic derivatives of **epi-inositol** and of 4-C-methyl-epi-[(+/-)-iso-laminitol] and 4-C-methyl-myo-inositol [(+/-)-laminitol]
AUTHOR: Gigg J; Gigg R (Reprint)
CORPORATE SOURCE: NATL INST MED RES, DIV LIPID & GEN CHEM, MILL HILL, LONDON NW7 1AA, ENGLAND (Reprint); NATL INST MED RES, DIV LIPID & GEN CHEM, LONDON NW7 1AA, ENGLAND
COUNTRY OF AUTHOR: ENGLAND
SOURCE: CARBOHYDRATE RESEARCH, (26 MAR 1997) Vol. 299, No. 1-2, pp. 77-83.
Publisher: ELSEVIER SCI LTD, THE BOULEVARD, LANGFORD LANE, KIDLINGTON, OXFORD, OXON, ENGLAND OX5 1GB.
ISSN: 0008-6215.
DOCUMENT TYPE: Article; Journal
FILE SEGMENT: PHYS; LIFE; AGRI
LANGUAGE: English
REFERENCE COUNT: 27

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB Oxidation of (+/-)-3,4,5-tri-O-benzyl-1,2-O-isopropylidene-myo-inositol with the pyridine-SO3 complex in methyl sulfoxide gave the ketone which was reduced with sodium borohydride to give almost exclusively the corresponding **epi-inositol** derivative. Reaction of the ketone with diazomethane gave an epoxide which was reduced with lithium aluminium hydride to give a 4-C-methyl-myo-inositol derivative and reaction of the ketone with methyl magnesium iodide gave the isomeric 4-C-methyl-**epi-inositol** derivative. (C) 1997 Elsevier Science Ltd.

=> d ibib abs 10

L84 ANSWER 10 OF 10 WPIX COPYRIGHT 2003 THOMSON DERWENT on STN
ACCESSION NUMBER: 2002-158901 [21] WPIX
DOC. NO. CPI: C2002-049937
TITLE: L-**epi-Inositol** derivative is useful as an intermediate of medicaments or agrochemicals.
DERWENT CLASS: B05 C03
PATENT ASSIGNEE(S): (HOKK) HOKKO CHEM IND CO LTD
COUNTRY COUNT: 1
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
JP 2001335544 A		20011204	(200221)*		22

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
JP 2001335544 A		JP 2000-158238	20000529

PRIORITY APPLN. INFO: JP 2000-158238 20000529
AN 2002-158901 [21] WPIX
AB JP2001335544 A UPAB: 20020403
NOVELTY - A L-**epi-inositol** derivative or its salt (I), are new.

DETAILED DESCRIPTION - A L-**epi-inositol** derivative of formula (I) or its salt, are new.

R1, R4-R7 = H, acyl or alkyl;

when R2 = amino, acylamide, alkylamino or N-acyl-N-alkylamino, R3 H; when R2 = hydroxyl or acyloxyl, R3 = hydroxymethyl, acyloxymethyl, azidemethyl, aminomethyl, acylamidemethyl, N-alkylaminomethyl or N-acyl-N-alkylaminomethyl; when R2 = O, R3 methylene, R3 + R2 + spirocarbon at the second position of the cyclohexane ring bind to each other to form 2,21-anhydro-2-C-hydroxymethyl of spiroepoxy ring.

INDEPENDENT CLAIMS are also included for a method of preparing 2-amino-2-deoxy-L-**epi-inositol** of formula (II) which comprises allowing the ketone group of L-**epi-2-inosose** of formula (III) to react with an ammonia derivative for dehydration condensation, and reducing with a reducing agent in the presence of a catalyst to convert into an amino group.

USE - The inositol derivative is useful as an intermediate of medicaments or agrochemicals.

ADVANTAGE - The inositol derivative having biological activity is inexpensively prepared in high yields.

Dwg.0/0

Inventor search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=> d his

     (FILE 'HOME' ENTERED AT 14:25:34 ON 18 AUG 2003)

     FILE 'CAPLUS' ENTERED AT 14:26:20 ON 18 AUG 2003
L1           65 S KANBE K?/AU
L2         4489 S TAKAHASHI A?/AU
L3         8664 S MORI T?/AU
L4          457 S TAMAMURA T?/AU
L5         6978 S TAKEUCHI T?/AU
L6         1234 S KITA Y?/AU
L7        21776 S L1-6
L8            3 S L7 AND EPI-INOSITOL
L9            7 S L7 AND ?INOSOSE
L10           7 S L8-9
                SELECT RN L10 1-7

     FILE 'REGISTRY' ENTERED AT 14:29:26 ON 18 AUG 2003
L11          36 S E1-36

     FILE 'CAPLUS' ENTERED AT 14:29:32 ON 18 AUG 2003
L12           7 S L10 AND L11   7 cites of 36 cpds displayed

     FILE 'CAPLUS' ENTERED AT 14:29:54 ON 18 AUG 2003

=> d ibib abs hitstr ind 1-7

L12  ANSWER 1 OF 7  CAPLUS  COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER:         2003:266870  CAPLUS
DOCUMENT NUMBER:          138:270409
TITLE:                    Scyllo-inosose and scyllo-inositol
                          manufacture
INVENTOR(S):              Kamibe, Kenji; Takahashi, Atsushi;
                          Kita, Yuichi; Yamaguchi, Masanori;
                          Tamamura, Takeshi; Mori, Tetsuya
PATENT ASSIGNEE(S):       Hokko Chemical Industry Co., Ltd., Japan
SOURCE:                   Jpn. Kokai Tokkyo Koho, 16 pp.
                          CODEN: JKXXAF
DOCUMENT TYPE:            Patent
LANGUAGE:                 Japanese
FAMILY ACC. NUM. COUNT:   1
PATENT INFORMATION:

     PATENT NO.        KIND  DATE           APPLICATION NO.  DATE
     ---------------   ----  --------       ---------------  --------
     JP 2003102492      A2   20030408       JP 2002-184912   20020625
PRIORITY APPLN. INFO.:                   JP 2001-191161   A  20010625
AB   The scyllo-inosose is manufd. from myo-inositol with Pseudomos
     and Acetobacter.  The scyllo-inosose is reduced with an
     reductant such as sodium borohydride to get scyllo-inositol.  The physiol.
     and morphol. characteristics of these microorganisms were given.  The
     scyllo-inosose is an useful intermediate for manufg.
     pharmaceuticals.  The scyllo-inositol is useful for control of. Alzheimer
     disease and for prepd. liq. crystal.
IT   488-64-2P, scyllo-Inosose
     RL: BPN (Biosynthetic preparation); THU (Therapeutic use); BIOL
     (Biological study); PREP (Preparation); USES (Uses)
        (scyllo-inosose and scyllo-inositol manuf.)
RN   488-64-2  CAPLUS
CN   myo-2-Inosose (7CI, 9CI)  (CA INDEX NAME)

Relative stereochemistry.
```
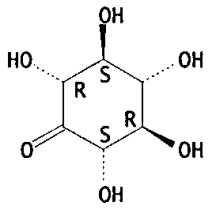
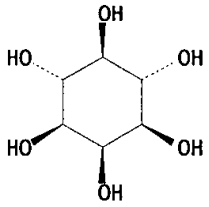
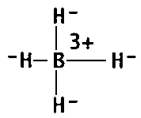



IT **87-89-8**, myo-Inositol
RL: BSU (Biological study, unclassified); RCT (Reactant); BIOL (Biological study); RACT (Reactant or reagent)
(scyllo-**inosose** and scyllo-inositol manuf.)
RN 87-89-8 CAPLUS
CN myo-Inositol (9CI) (CA INDEX NAME)

Relative stereochemistry.



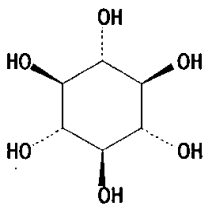
IT **16940-66-2**, Sodium borohydride
RL: RCT (Reactant); RACT (Reactant or reagent)
(scyllo-**inosose** and scyllo-inositol manuf.)
RN 16940-66-2 CAPLUS
CN Borate(1-), tetrahydro-, sodium (8CI, 9CI) (CA INDEX NAME)



Na+

IT **488-59-5P**, scyllo-Inositol
RL: SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(scyllo-**inosose** and scyllo-inositol manuf.)
RN 488-59-5 CAPLUS
CN scyllo-Inositol (9CI) (CA INDEX NAME)

Relative stereochemistry.

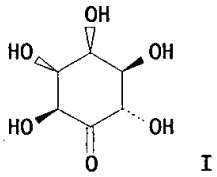


IC ICM C12P007-26
ICS C07C029-143; C07C035-16; C12N001-20; C12P007-18; C12R001-38; C12R001-02
CC 16-2 (Fermentation and Bioindustrial Chemistry)
Section cross-reference(s): 1
ST scyllo **inosose** manuf myoinositol Pseudomos Acetobacter; redn scyllo inositol Alzheimer disease pharmaceutical
IT Acetobacter
Alzheimer's disease
Fermentation
Liquid crystals
Pseudomonas
Reducing agents
(scyllo-**inosose** and scyllo-inositol manuf.)
IT **488-64-2P**, scyllo-**Inosose**
RL: BPN (Biosynthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(scyllo-**inosose** and scyllo-inositol manuf.)
IT **87-89-8**, myo-Inositol
RL: BSU (Biological study, unclassified); RCT (Reactant); BIOL (Biological study); RACT (Reactant or reagent)
(scyllo-**inosose** and scyllo-inositol manuf.)
IT **16940-66-2**, Sodium borohydride
RL: RCT (Reactant); RACT (Reactant or reagent)
(scyllo-**inosose** and scyllo-inositol manuf.)
IT **488-59-5P**, scyllo-Inositol
RL: SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(scyllo-**inosose** and scyllo-inositol manuf.)

L12 ANSWER 2 OF 7 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 2002:672204 CAPLUS
DOCUMENT NUMBER: 137:200353
TITLE: D-allo-5-**inosose**, its microbial manufacture, and manufacture of allo-inositol, D-allo-3-**inosose**, or D-chiro-inositol
INVENTOR(S): **Takahashi, Atsushi**; Yamaguchi, Masanori; **Mori, Tetsuya**; Kamibe, Kenji; **Kita, Yuichi**; Tomoda, Akihiro; **Tamamura, Takeshi**
PATENT ASSIGNEE(S): Hokko Chemical Industry Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 27 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002249459	A2	20020906	JP 2001-46412	20010222

PRIORITY APPLN. INFO.: JP 2001-46412 20010222
OTHER SOURCE(S): CASREACT 137:200353
GI



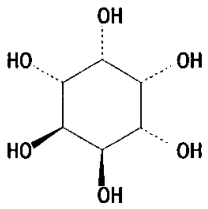
I

AB D-Allo-5-**inosose** (I), useful as a starting material for manuf.

of pharmaceuticals, is manufd. by treatment of **epi-inositol** (II) with microorganisms capable of oxidizing II into I. Allo-inositol (III) is manufd. by redn. of I with alkali metal borohydrides, alkali metal trialkoxyborohydrides, or alkali metal cyanoborohydrides as reducing agents in aq. media and sepn. of III from II. D-Allo-3-**inosose** (IV) is manufd. by treatment of III with microorganisms capable of oxidizing III into IV. D-Chiro-inositol (V), useful for treatment of non-insulin-dependent diabetes mellitus and polycystic ovary syndrome, is manufd. by redn. of IV with alkali metal borohydrides, alkali metal trialkoxyborohydrides, or alkali metal cyanoborohydrides in aq. media and sepn. of V from III. V was manufd. from II and purified in a total yield of 32.3%.

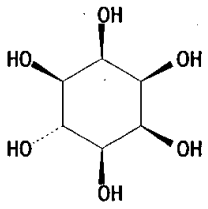
IT **643-10-7P**, allo-Inositol
RL: BCP (Biochemical process); BMF (Bioindustrial manufacture); IMF (Industrial manufacture); PUR (Purification or recovery); RCT (Reactant); BIOL (Biological study); PREP (Preparation); PROC (Process); RACT (Reactant or reagent)
(manuf. of D-allo-5-**inosose**, allo-inositol, D-allo-3-**inosose**, and D-chiro-inositol for pharmaceuticals)
RN 643-10-7 CAPLUS
CN allo-Inositol (9CI) (CA INDEX NAME)

Relative stereochemistry.



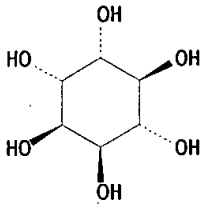
IT **488-58-4**, **epi-Inositol**
RL: BCP (Biochemical process); RCT (Reactant); BIOL (Biological study); PROC (Process); RACT (Reactant or reagent)
(manuf. of D-allo-5-**inosose**, allo-inositol, D-allo-3-**inosose**, and D-chiro-inositol for pharmaceuticals)
RN 488-58-4 CAPLUS
CN epi-Inositol (9CI) (CA INDEX NAME)

Relative stereochemistry.



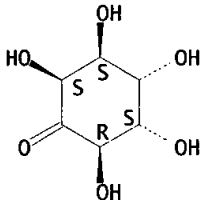
IT **643-12-9P**, D-chiro-Inositol
RL: BMF (Bioindustrial manufacture); IMF (Industrial manufacture); PUR (Purification or recovery); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(manuf. of D-allo-5-**inosose**, allo-inositol, D-allo-3-**inosose**, and D-chiro-inositol for pharmaceuticals)
RN 643-12-9 CAPLUS
CN D-chiro-Inositol (9CI) (CA INDEX NAME)

Absolute stereochemistry.



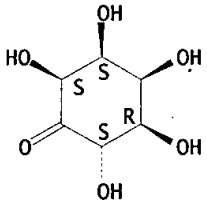
IT **148218-11-5P**, D-Allo-3-**Inosose** **452335-59-0P**, D-allo-5-**Inosose**
RL: BMF (Bioindustrial manufacture); PUR (Purification or recovery); RCT (Reactant); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent)
(manuf. of D-allo-5-**inosose**, allo-inositol, D-allo-3-**inosose**, and D-chiro-inositol for pharmaceuticals)
RN 148218-11-5 CAPLUS
CN D-allo-3-Inosose (9CI) (CA INDEX NAME)

Absolute stereochemistry.

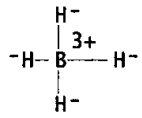


RN 452335-59-0 CAPLUS
CN D-allo-5-Inosose (9CI) (CA INDEX NAME)

Absolute stereochemistry.

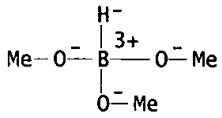


IT **13762-51-1**, Potassium borohydride **16940-17-3**, Sodium trimethoxyborohydride **16940-66-2**, Sodium borohydride **16949-15-8**, Lithium borohydride **25895-60-7**, Sodium cyanoborohydride
RL: RCT (Reactant); RACT (Reactant or reagent)
(reducing agent; manuf. of D-allo-5-**inosose**, allo-inositol, D-allo-3-**inosose**, and D-chiro-inositol for pharmaceuticals)
RN 13762-51-1 CAPLUS
CN Borate(1-), tetrahydro-, potassium (8CI, 9CI) (CA INDEX NAME)



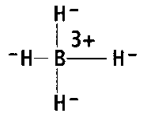
K+

RN 16940-17-3 CAPLUS
CN Borate(1-), hydrotrimethoxy-, sodium, (T-4)- (9CI) (CA INDEX NAME)



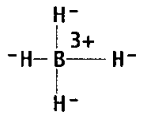
● Na+

RN 16940-66-2 CAPLUS
CN Borate(1-), tetrahydro-, sodium (8CI, 9CI) (CA INDEX NAME)



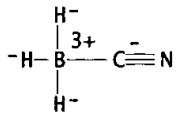
Na+

RN 16949-15-8 CAPLUS
CN Borate(1-), tetrahydro-, lithium (8CI, 9CI) (CA INDEX NAME)



Li+

RN 25895-60-7 CAPLUS
CN Borate(1-), (cyano-.kappa.C)trihydro-, sodium, (T-4)- (9CI) (CA INDEX NAME)



IC ICM C07C049-497
ICS C07C029-143; C07C035-16; C12P007-02; C12P007-26; C12R001-64; C12R001-01; C12R001-38
CC 16-2 (Fermentation and Bioindustrial Chemistry)
Section cross-reference(s): 63
ST **inosose** inositol manuf fermn antidiabetic; polycystic ovary syndrome treatment inositol manuf; biochem oxidn redn **inosose** inositol manuf
IT Oxidation
(biol.; manuf. of D-allo-5-**inosose**, allo-inositol, D-allo-3-**inosose**, and D-chiro-inositol for pharmaceuticals)
IT Acetobacter
Agrobacterium
Antidiabetic agents
Enterobacter
Fermentation
Gluconobacter
Haemophilus
Pasteurella
Pseudomonas
Reducing agents
Reduction
Serratia
Sphingomonas
Xanthomonas
Yersinia
(manuf. of D-allo-5-**inosose**, allo-inositol, D-allo-3-**inosose**, and D-chiro-inositol for pharmaceuticals)
IT Diabetes mellitus
(non-insulin-dependent, therapeutic agents; manuf. of D-allo-5-**inosose**, allo-inositol, D-allo-3-**inosose**, and D-chiro-inositol for pharmaceuticals)
IT Ovary, disease
(polycystic, therapeutic agents; manuf. of D-allo-5-**inosose**, allo-inositol, D-allo-3-**inosose**, and D-chiro-inositol for pharmaceuticals)
IT **643-10-7P**, allo-Inositol
RL: BCP (Biochemical process); BMF (Bioindustrial manufacture); IMF (Industrial manufacture); PUR (Purification or recovery); RCT (Reactant); BIOL (Biological study); PREP (Preparation); PROC (Process); RACT (Reactant or reagent)
(manuf. of D-allo-5-**inosose**, allo-inositol, D-allo-3-**inosose**, and D-chiro-inositol for pharmaceuticals)
IT **488-58-4**, **epi-Inositol**
RL: BCP (Biochemical process); RCT (Reactant); BIOL (Biological study); PROC (Process); RACT (Reactant or reagent)
(manuf. of D-allo-5-**inosose**, allo-inositol, D-allo-3-**inosose**, and D-chiro-inositol for pharmaceuticals)
IT **643-12-9P**, D-chiro-Inositol
RL: BMF (Bioindustrial manufacture); IMF (Industrial manufacture); PUR (Purification or recovery); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(manuf. of D-allo-5-**inosose**, allo-inositol, D-allo-3-**inosose**, and D-chiro-inositol for pharmaceuticals)
IT **148218-11-5P**, D-Allo-3-**Inosose** **452335-59-0P**,

D-allo-5-**Inosose**
RL: BMF (Bioindustrial manufacture); PUR (Purification or recovery); RCT (Reactant); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent)
(manuf. of D-allo-5-**inosose**, allo-inositol, D-allo-3-**inosose**, and D-chiro-inositol for pharmaceuticals)

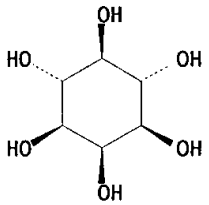
IT **13762-51-1**, Potassium borohydride **16940-17-3**, Sodium trimethoxyborohydride **16940-66-2**, Sodium borohydride **16949-15-8**, Lithium borohydride **25895-60-7**, Sodium cyanoborohydride
RL: RCT (Reactant); RACT (Reactant or reagent)
(reducing agent; manuf. of D-allo-5-**inosose**, allo-inositol, D-allo-3-**inosose**, and D-chiro-inositol for pharmaceuticals)

L12 ANSWER 3 OF 7 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 2002:19320 CAPLUS
DOCUMENT NUMBER: 136:68818
TITLE: Microbial manufacture of L-chiro-1-**inosose**
INVENTOR(S): **Takahashi, Atsushi**; Kamibe, Kenji; **Kita, Yuichi**; **Mori, Tetsuya**; Yamaguchi, Masanori; Tomoda, Akihiro; **Tamamura, Takeshi**
PATENT ASSIGNEE(S): Hokko Chemical Industry Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 11 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002000285	A2	20020108	JP 2000-186337	20000621

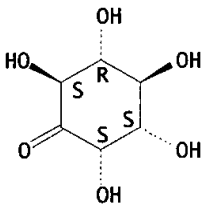
PRIORITY APPLN. INFO.: JP 2000-186337 20000621
OTHER SOURCE(S): CASREACT 136:68818
AB L-Chiro-1-**inosose** (I), useful as an enzyme inhibitor or an intermediate for pharmaceuticals, is manufd. with microorganisms from myo-inositol (II). Xanthomonas sp. AB10198 (FERM P-17893) was cultured in a liq. medium contg. II at 27.degree. for 5 days to give I at 141 mg/mL in 95% conversion.
IT **87-89-8**, myo-Inositol
RL: BCP (Biochemical process); RCT (Reactant); BIOL (Biological study); PROC (Process); RACT (Reactant or reagent)
(microbial manuf. of chiro-**inosose** from myo-inositol)
RN 87-89-8 CAPLUS
CN myo-Inositol (9CI) (CA INDEX NAME)

Relative stereochemistry.



IT **56816-02-5P**, L-chiro-1-**Inosose**
RL: BMF (Bioindustrial manufacture); BPN (Biosynthetic preparation); BIOL (Biological study); PREP (Preparation)
(microbial manuf. of chiro-**inosose** from myo-inositol)
RN 56816-02-5 CAPLUS
CN L-chiro-1-Inosose (9CI) (CA INDEX NAME)

Absolute stereochemistry.

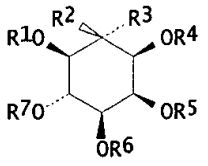


IC ICM C12P007-26
ICS C12N001-20; C12P007-18; C12P007-26; C12R001-64; C12R001-01; C12R001-38; C12R001-02; C12R001-18; C12R001-425; C12R001-185; C12R001-21
CC 16-5 (Fermentation and Bioindustrial Chemistry)
ST **chiroinososse** manuf Xanthomonas myoinositol oxidn; microbial oxidn inositol **inosose** manuf
IT Oxidation
(biol.; microbial manuf. of chiro-**inosose** from myo-inositol)
IT Acetobacter
Acetobacteraceae
Agrobacterium
Enterobacter
Enterobacteriaceae
Erwinia
Fermentation
Gluconobacter
Haemophilus
Pasteurella
Pasteurellaceae
Pseudomonadaceae
Pseudomonas
Rhizobiaceae
Serratia
Sphingomonas
Xanthomonas
Yersinia
(microbial manuf. of chiro-**inosose** from myo-inositol)
IT **87-89-8**, myo-Inositol
RL: BCP (Biochemical process); RCT (Reactant); BIOL (Biological study); PROC (Process); RACT (Reactant or reagent)
(microbial manuf. of chiro-**inosose** from myo-inositol)
IT **56816-02-5P**, L-chiro-1-**Inosose**
RL: BMF (Bioindustrial manufacture); BPN (Biosynthetic preparation); BIOL (Biological study); PREP (Preparation)
(microbial manuf. of chiro-**inosose** from myo-inositol)

L12 ANSWER 4 OF 7 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 2001:874389 CAPLUS
DOCUMENT NUMBER: 136:20217
TITLE: Preparation of L-**epi-inositol**
INVENTOR(S): Ogawa, Seiichiro; **Takahashi, Atsushi**
PATENT ASSIGNEE(S): Hokko Chemical Industry Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 22 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001335544	A2	20011204	JP 2000-158238	20000529

PRIORITY APPLN. INFO.: JP 2000-158238 20000529
OTHER SOURCE(S): CASREACT 136:20217; MARPAT 136:20217
GI



I

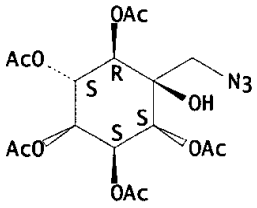
AB Title compds. I (R1, R4-R7 = H, acyl, alkyl; if R2 = amino, acylamido, alkylamino, N-acyl-N-alkylamino, then R3 = H; if R2 = OH, acyloxy, then R3 = HOCH2, acyloxymethyl, azidomethyl, aminomethyl, acylamidomethyl; if R2 = O, then R3 = CH2 forming ring with R2) or their salts are prepd. L-Epi-2-**inososse** was reacted with PhNHNH2 in the presence of AcOH in H2O at 5.degree. for 2 h to give 79.5% L-epi-2-**inososse** phenylhydrazone, which was hydrogenated with H in the presence of platinum oxide in AcOH, treated with HCl at 100.degree. for 3.5 h, and treated with strongly acidic ion exchanger to give 2-amino-2-deoxy-L-**epi-inositol**.

IT **377777-76-9P**
RL: IMF (Industrial manufacture); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. of **epi-inositol**)

RN 377777-76-9 CAPLUS

CN D-epi-Inositol, 4-C-(azidomethyl)-, 1,2,3,5,6-pentaacetate (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

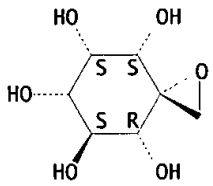


IT **22059-57-0P 38876-94-7P 377777-72-5P**
377777-74-7P 377777-77-0P 379224-06-3P
379224-11-0P
RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation)
(prepn. of **epi-inositol**)

RN 22059-57-0 CAPLUS

CN D-epi-Inositol, 2,21-anhydro-2-C-(hydroxymethyl)- (9CI) (CA INDEX NAME)

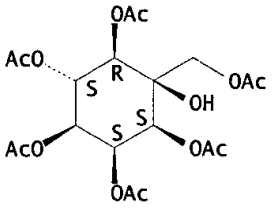
Absolute stereochemistry. Rotation (+).



RN 38876-94-7 CAPLUS

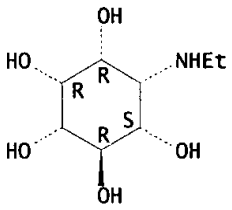
CN D-epi-Inositol, 4-C-[(acetyloxy)methyl]-, 1,2,3,5,6-pentaacetate (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



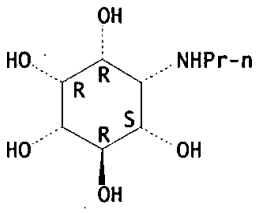
RN 377777-72-5 CAPLUS
CN D-epi-Inositol, 4-deoxy-4-(ethylamino)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



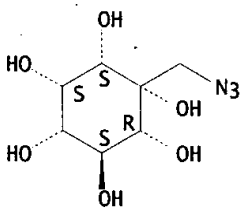
RN 377777-74-7 CAPLUS
CN D-epi-Inositol, 4-deoxy-4-(propylamino)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



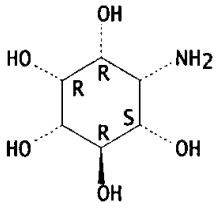
RN 377777-77-0 CAPLUS
CN D-epi-Inositol, 4-C-(azidomethyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



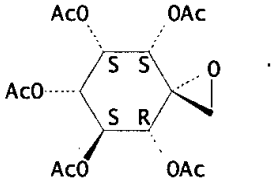
RN 379224-06-3 CAPLUS
CN D-epi-Inositol, 4-amino-4-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).

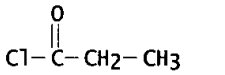


RN 379224-11-0 CAPLUS
CN 1-Oxaspiro[2.5]octane-4,5,6,7,8-pentol, pentaacetate, (4R,5S,7S,8S)- (9CI) (CA INDEX NAME)

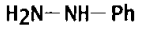
Absolute stereochemistry. Rotation (+).



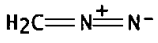
IT **79-03-8**, Propionyl chloride **100-63-0**, Phenylhydrazine **334-88-3**, Diazomethane **33471-33-9**, D-epi-4-**Inosose**
RL: RCT (Reactant); RACT (Reactant or reagent)
(prepn. of **epi-inositol**)
RN 79-03-8 CAPLUS
CN Propanoyl chloride (9CI) (CA INDEX NAME)



RN 100-63-0 CAPLUS
CN Hydrazine, phenyl- (8CI, 9CI) (CA INDEX NAME)

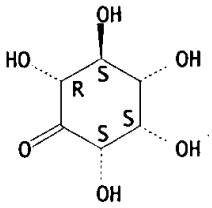


RN 334-88-3 CAPLUS
CN Methane, diazo- (8CI, 9CI) (CA INDEX NAME)



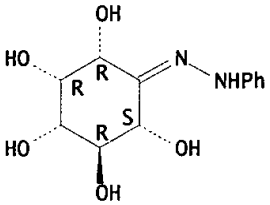
RN 33471-33-9 CAPLUS
CN D-epi-4-Inosose (9CI) (CA INDEX NAME)

Absolute stereochemistry.



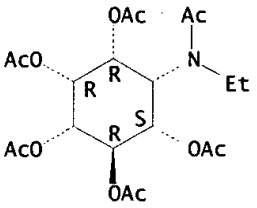
IT **7045-49-0P 377777-73-6P 377777-75-8P**
379224-07-4P 379224-09-6P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. of epi-inositol)
RN 7045-49-0 CAPLUS
CN D-epi-4-Inosose, phenylhydrazone (9CI) (CA INDEX NAME)

Absolute stereochemistry.



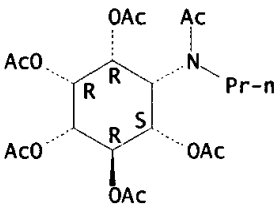
RN 377777-73-6 CAPLUS
CN D-epi-Inositol, 4-(acetylethylamino)-4-deoxy-, pentaacetate (ester) (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



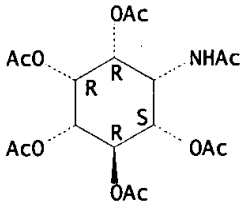
RN 377777-75-8 CAPLUS
CN D-epi-Inositol, 4-(acetylpropylamino)-4-deoxy-, pentaacetate (ester) (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



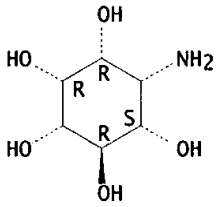
RN 379224-07-4 CAPLUS
CN D-epi-Inositol, 4-(acetylamino)-4-deoxy-, 1,2,3,5,6-pentaacetate (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



RN 379224-09-6 CAPLUS
CN D-epi-Inositol, 4-amino-4-deoxy-, hydrochloride (9CI) (CA INDEX NAME)

Absolute stereochemistry.



● HCl

IC ICM C07C213-02
ICS C07C067-26; C07C069-21; C07C215-44; C07C233-23; C07C247-06; C07D301-02; C07D303-14; C07B061-00
CC 33-6 (Carbohydrates)
ST inositol prepn
IT **377777-76-9P**
RL: IMF (Industrial manufacture); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. of **epi-inositol**)
IT **22059-57-0P 38876-94-7P 377777-72-5P 377777-74-7P 377777-77-0P 379224-06-3P 379224-11-0P**
RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation)
(prepn. of **epi-inositol**)
IT **79-03-8**, Propionyl chloride **100-63-0**, Phenylhydrazine **334-88-3**, Diazomethane **33471-33-9**, D-epi-4-**Inosose**
RL: RCT (Reactant); RACT (Reactant or reagent)
(prepn. of **epi-inositol**)
IT **7045-49-0P 377777-73-6P 377777-75-8P 379224-07-4P 379224-09-6P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. of **epi-inositol**)

L12 ANSWER 5 OF 7 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 2001:798044 CAPLUS
DOCUMENT NUMBER: 135:339209
TITLE: Compositions for inhibiting the proliferation of human immunodeficiency virus and method of inhibiting the proliferation of this virus
INVENTOR(S): **Takeuchi, Tomio**; Ohno, Tuneya; Nakamura, Mariko; **Tamamura, Tsuyoshi**; **Takahashi, Atsushi**
PATENT ASSIGNEE(S): Hokko Chemical Industry Co., Ltd., Japan; Zaidan Hojin

Biseibutsu Kagaku Kenkyu Kai
SOURCE: PCT Int. Appl., 27 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001080848	A1	20011101	WO 2001-JP3587	20010425

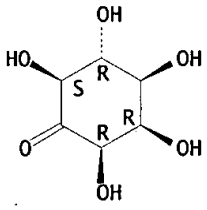
W: CA, JP, US
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR
PRIORITY APPLN. INFO.: JP 2000-123407 A 20000425

AB (+)-Protoquercitol, (-)-protoquercitol, (.+-.)-protoquercitol, L-epi-2-**inosose**, D-epi-2-**inosose**, and DL-epi-2-**inosose** have an activity of inhibiting the proliferation of HIV infecting human T cells and/or human monocytes/macrophages and/or other human hemocytes and, therefore, are useful as HIV proliferation inhibitors. Also, a method of inhibiting the proliferation of HIV by treating HIV with the above compds. or enantiomers or racemates thereof, is provided.

IT **488-68-6**, D-epi-2-**Inosose** **488-73-3**, (+)-Proto-quercitol **6623-68-3**, DL-epi-2-**Inosose** **17278-12-5** **33471-33-9**, 2-**Inosose**, L-epi- **90899-07-3**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(quercitol and **inosose** analogs for inhibition of HIV proliferation)

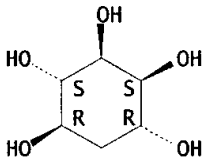
RN 488-68-6 CAPLUS
CN D-epi-2-Inosose (7CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



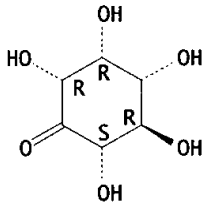
RN 488-73-3 CAPLUS
CN D-chiro-Inositol, 2-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



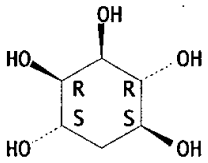
RN 6623-68-3 CAPLUS
CN epi-2-Inosose (9CI) (CA INDEX NAME)

Relative stereochemistry.



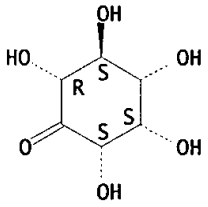
RN 17278-12-5 CAPLUS
CN L-chiro-Inositol, 2-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



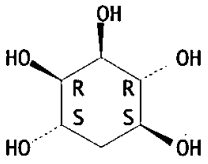
RN 33471-33-9 CAPLUS
CN D-epi-4-Inosose (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 90899-07-3 CAPLUS
CN chiro-Inositol, 2-deoxy- (9CI) (CA INDEX NAME)

Relative stereochemistry.



IC ICM A61K031-047
ICS A61K031-122; A61P031-18
CC 1-5 (Pharmacology)
Section cross-reference(s): 63
ST quercitol **inosose** HIV proliferation inhibitor
IT Hemocyte
Macrophage
Monocyte
T cell (lymphocyte)
(infection; quercitol and **inosose** analogs for inhibition of HIV proliferation)
IT Drug delivery systems
(injections; quercitol and **inosose** analogs for inhibition of HIV proliferation)
IT Anti-AIDS agents

Human immunodeficiency virus 1
(quercitol and **inosose** analogs for inhibition of HIV proliferation)

IT **488-68-6**, D-epi-2-**Inosose** **488-73-3**, (+)-Proto-quercitol **6623-68-3**, DL-epi-2-**Inosose** **17278-12-5** **33471-33-9**, 2-**Inosose**, L-epi- **90899-07-3**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(quercitol and **inosose** analogs for inhibition of HIV proliferation)

REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

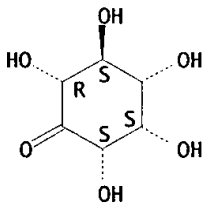
L12 ANSWER 6 OF 7 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 2001:24366 CAPLUS
DOCUMENT NUMBER: 134:171044
TITLE: (-)-epi-**Inosose**-2
AUTHOR(S): Hosomi, Hiroyuki; Ohba, Shigeru; Ogawa, Seiichiro; **Takahashi, Atsushi**
CORPORATE SOURCE: Faculty of Science and Technology, Department of Chemistry, Keio University, Kohoku-ku, Yokohama, 223-8522, Japan
SOURCE: Acta Crystallographica, Section C: Crystal Structure Communications (2000), C56(12), e584-e585
CODEN: ACSCEE; ISSN: 0108-2701
PUBLISHER: Munksgaard International Publishers Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The structure of the title compd., C6H10O6, was detd. to confirm the position of the keto group in the mol. prepd. enantioselectively by a bioconversion from myo-inositol. There are two independent mols. showing similar geometry. Crystallog. data are given.

IT **33471-33-9**, (-)-Epi-**Inosose**-2
RL: PRP (Properties)
(crystal structure of)

RN 33471-33-9 CAPLUS
CN D-epi-4-Inosose (9CI) (CA INDEX NAME)

Absolute stereochemistry.



CC 75-8 (Crystallography and Liquid Crystals)
Section cross-reference(s): 33

ST mol structure epi **inosose**

IT Crystal structure
Molecular structure
(of epi-**inosose**-2)

IT **33471-33-9**, (-)-Epi-**Inosose**-2
RL: PRP (Properties)
(crystal structure of)

REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 7 OF 7 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 2000:881342 CAPLUS
DOCUMENT NUMBER: 134:42384

TITLE: Novel process for producing L-epi-2-**inosose** by microbial oxidation of myo-inositol and novel process for producing **epi-inositol**
INVENTOR(S): **Takahashi, Atsushi; Kanbe, Kenji; Mori, Tetsuya; Kita, Yuichi; Tamamura, Tsuyoshi; Takeuchi, Tomio**
PATENT ASSIGNEE(S): Hokko Chemical Industry Co., Ltd., Japan; Zaidan Hojin Biseibutsu Kagaku Kenkyu Kai
SOURCE: PCT Int. Appl., 65 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000075355	A1	20001214	WO 2000-JP3687	20000607
W: CA, CN, IL, IN, JP, KR, US				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
EP 1197562	A1	20020417	EP 2000-937174	20000607
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				

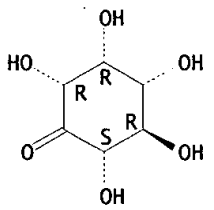
PRIORITY APPLN. INFO.:
JP 1999-159861 A 19990607
JP 1999-340523 A 19991130
JP 2000-151709 A 20000523
WO 2000-JP3687 W 20000607

OTHER SOURCE(S): CASREACT 134:42384

AB L-Epi-2-**inosose** and **epi-inositol**, which are useful as various drugs or synthesis intermediates, can be efficiently produced from less expensive myo-inositol. Myo-inositol is treated with a gram-neg. bacterium. e.g. Xanthomonas sp., capable of converting myo-inositol into L-epi-2-**inosose** to thereby convert the myo-inositol into L-epi-2-**inosose**. The L-epi-2-**inosose** thus obtained is further reacted in an aq. reaction medium with a reducing agent comprising an alkali metal boron hydride or another alkali metal hydride to form **epi-inositol** and myo-inositol. Next, the **epi-inositol** is sepd. and isolated from the redn. reaction mixt. comprising **epi-inositol** and myo-inositol to give **epi-inositol**.

IT **6623-68-3P**, epi-2-**Inosose**
RL: BPN (Biosynthetic preparation); RCT (Reactant); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent)
(novel process for producing L-**epiinosose** by microbial oxidn. of myo-inositol and boron hydride-redn. to **epi-inositol**)
RN 6623-68-3 CAPLUS
CN epi-2-Inosose (9CI) (CA INDEX NAME)

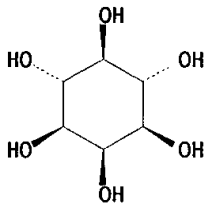
Relative stereochemistry.



IT **87-89-8**, myo-Inositol
RL: RCT (Reactant); RACT (Reactant or reagent)
(novel process for producing L-**epiinosose** by microbial oxidn. of myo-inositol and boron hydride-redn. to **epi-inositol**)

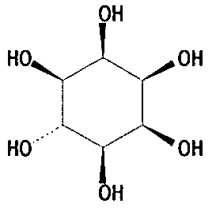
RN 87-89-8 CAPLUS
CN myo-Inositol (9CI) (CA INDEX NAME)

Relative stereochemistry.



IT **488-58-4P, epi-Inositol**
RL: SPN (Synthetic preparation); PREP (Preparation)
(novel process for producing L-**epiinosose** by microbial oxidn. of myo-inositol and boron hydride-redn. to **epi-inositol**)
RN 488-58-4 CAPLUS
CN epi-Inositol (9CI) (CA INDEX NAME)

Relative stereochemistry.



IC C12P019-02; C12N001-20; C12P019-02; C12R001-64; C12P019-02; C12R001-38; C12P019-02; C12R001-02; C12P019-02; C12R001-18; C12P019-02; C12R001-425; C12P019-02; C12R001-21; C12P019-02; C12R001-01; C12N001-20; C12R001-64; C12N001-20; C12R001-38
CC 33-6 (Carbohydrates)
Section cross-reference(s): 16
ST gram neg bacterium Xanthomonas microbial oxidn myoinositol; **epiinososе** prepn redn; epiinositol prepn
IT Oxidation
(biol.; novel process for producing L-**epiinosose** by microbial oxidn. of myo-inositol and boron hydride-redn. to **epi-inositol**)
IT Acetobacter
Acetobacteraceae
Agrobacterium
Enterobacter
Enterobacteriaceae
Erwinia
Gluconobacter
Gram-negative bacteria
Haemophilus
Pasteurella
Pasteurellaceae
Pseudomonadaceae
Pseudomonas
Reduction
Rhizobiaceae
Serratia
Xanthomonas
Yersinia
(novel process for producing L-**epiinosose** by microbial oxidn. of myo-inositol and boron hydride-redn. to **epi-**

inositol)
IT **6623-68-3P**, epi-2-**Inosose**
RL: BPN (Biosynthetic preparation); RCT (Reactant); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent)
(novel process for producing L-**epiinosose** by microbial oxidn. of myo-inositol and boron hydride-redn. to **epi-inositol**)
IT **87-89-8**, myo-Inositol
RL: RCT (Reactant); RACT (Reactant or reagent)
(novel process for producing L-**epiinosose** by microbial oxidn. of myo-inositol and boron hydride-redn. to **epi-inositol**)
IT **488-58-4P**, **epi-Inositol**
RL: SPN (Synthetic preparation); PREP (Preparation)
(novel process for producing L-**epiinosose** by microbial oxidn. of myo-inositol and boron hydride-redn. to **epi-inositol**)
REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT